REMARKS

Responsive to the Office action mailed October 23, 2009, applicant requests entry of the foregoing amendments, consideration of the following remarks and reconsideration of the rejections set forth in said office action. Claims 1, 2, 3, 5 and 21 have been amended and claim 20 cancelled, claims 14-19 were cancelled previously. New claim 24 has been added

Claim 1 was objected to for an informality in the language at lines 4-5. Claim 1 has been amended to correct the informality.

Claims 1-13, 21-23 were rejected under 35 USC 112, second paragraph as being indefinite for failing to particularly point out and distinctly claims the subject matter which applicant regards as the invention. More particularly, the use of "consisting in" followed by "characterized by" was found to be indefinite. Applicants have amended claim 1 to use the transitional phrase "consisting of" followed by "wherein". Applicants submit that as amended, claims 1 particularly point out and distinctly claim the subject matter which applicants regard as the invention and the rejection should be withdrawn.

Claims 1-4, 7-11, 13, and 23 were rejected under 35 USC 103(a) as being unpatentable over Heffer (US 3,850,668) in view of LaBarge et al. (US 2004/0077494). Applicants submit that neither Heffer '668 nor LaBarge et al. '494 singlely or combined render the present invention obvious.

The present invention is directed toward a process for the formation of a coating of metal oxides comprising at least one precious metal from Group VIII of the Periodic Table of the elements in combination with titanium and/or zirconium, on an electrically conductive substrate made of steel or of iron. The process consists of applying a solution comprising at least one organometallic compound to the substrate and then converting the organometallic compound(s) to metal oxide(s) by means of a heat treatment. The process being characterized in that the sole solution applied to the said substrate is a non-aqueous solution of metal acetylacetonate or of a mixture of metal acetylacetonates dissolved in one or more solvents which dissolve each metal acetylacetonate, the solvents being chosen from alcohols, ketones, chloromethanes or a mixture thereof. The process of the present invention provide for a uniform and adherent coating of metal oxide(s) on the substrate made of iron or steel. When the

coating in "activated" it can act as a cathode suitable for use in the electrolysis of aqueous solutions of alkali metal chlorides such as sodium chloride solutions.

Heffer '668 discloses a process for the formation of a coating of ruthenium metal or a ruthenium compound or both on a body of graphite or carbon. The method comprises removing gaseous fluid from the carbon or graphite body, contacting the body with a solution or suspension of the ruthenium metal or ruthenium compound and evaporating or allowing to evaporate the solvent or suspending medium so as to leave the ruthenium metal or ruthenium compound in contact with the body. To assist evaporation of the solvent or suspending medium the body may be heated. As noted by the examiner, Heffer '668 discloses the use of a substrate of carbon or graphite with ruthenium.

Applicants submit that the carbon or graphite substrate required by Heffer '668 is a much more expensive material that the iron or steel substrate of the present invention. Furthermore, Heffer '668 fails to disclose a process that employees a precious metal from Group VIII of the Periodic Table of the elements in combination with titanium and/or zirconium as does the present invention. The present inventors discovered that a if combination of a precious metal from Group VIII of the Periodic Table of the elements with titanium and/or zirconium was used in a non-aqueous solution of metal acetylacetonate or of a mixture of metal acetylacetonates, an adherent coating could be provided on an iron or steel substrate. Applicants submit that Heffer '668 fails to anticipate or render obvious such a process. Heffer '668 fails to disclose the use of titanium and/or zirconium in combination with ruthenium. Furthermore, Heffer '668 fails to disclose the use of substrates of iron or steel. Applicants submit that there is no disclosure in Heffer '668 that would lead a person skilled in the art to employ a different substrate and to include titanium and/or zirconium in the coating solution.

LaBarge et al '494 discloses are methods for depositing catalytic material on a support, methods for making a gas treatment device, and the gas treatment devices formed therefrom. In one embodiment, the method for disposing a catalytic material on a support comprises: contacting the support with a catalytic material and a supercritical fluid, changing the supercritical fluid to a non-supercritical fluid, and depositing at least a portion of the catalytic material in pores of the support, wherein the catalytic material has a first solubility in the supercritical fluid of greater than or equal to about 70% and a second solubility in the non-supercritical fluid of less than or equal to about 20%. In one embodiment,

the method for making the gas treatment device comprises disposing the supported catalytic material onto a substrate and disposing the substrate in a housing comprising an inlet for receiving gas and an outlet.

LaBarge et al '494 discloses that the catalyst is disposed on a support (see paragraph 0011) and the support can be disposed on a substrate. Some possible substrates to contain the catalyst supports include foils, monoliths, sponges, perform, mat, fibrous material, porous glasses, foams, pellets, particles, molecular sieves, and the like (depending upon the particular device), and mixtures comprising at least one of the foregoing materials and forms, wherein metal foils are particularly preferred, especially stainless steel metal foils. Possible support materials include ceramic (e.g., cordierite, alumina, and the like), metallic, cermet, and carbides (e.g., silicon carbide, and the like), silicides, nitrides (e.g., silicon nitride, and the like), as well as combination and the like, and mixtures comprising at least one of the foregoing materials.

Applicants submit that LaBarge et al. '494 fails to disclose the iron or steel substrate of the present invention. The stainless steel disclosed by LaBarge et al. '494 is not the same substrate material as the iron or steel substrate of the present invention. Furthermore, LaBarge et al. 494 fails to disclose the use of titanium and/or zirconium in combination with ruthenium as set forth in the amended claims of the present application.

Applicants submit that it is not obvious to combine Heffer '668 with LaBarge et al. '494, but that if such a combination were obvious, it would fail to render obvious the process of the present invention as currently claimed which makes use of a combination of ruthenium and titanium and/or zirconium in the formation of an adherent coating on a substrate of iron or steel.

Claim 5 was rejected under 35 USC 103(a) as being unpatentable over Heffer '668 and LaBarge et al.'494 further in view of Hunt et al. (US 6,132,653). Applicants submit that neither Heffer '668 nor LaBarge et al. '494 nor Hunt et al. '653 singlely or combined render the present invention obvious. Claim 5 depends from and includes each and every limitations of claim 1. As discussed above, Heffer '668 and LaBarge et al.'494 singlely and in combination fails to render obvious the present invention. Applicants submit that Hunt et al '653 fails to remedy this deficiency noted above with respect to

Heffer '668 and LaBarge et al. '494.

Hunt et al. '653 discloses a method for chemical vapor deposition using a very fine atomization or vaporization of a reagent containing liquid or liquid-like fluid near its supercritical temperature, where the resulting atomized or vaporized solution is entered into a flame or a plasma torch, and a powder is formed or a coating is deposited onto a substrate. Hunt et al. '653 discloses that preferred liquid solvents include, but are not limited to, ethanol, methanol, water, isopropanol and toluene. Applicants submit that there is no disclosure in Hunt et al. '653 of a process for the formation of a coating of metal oxides comprising at least one precious metal from Group VIII of the Periodic Table of the elements in combination with titanium and/or zirconium, on an electrically conductive substrate made of steel or of iron as set forth in the present invention. Applicants submit that a combination of Heffer '668, LaBarge et al. '494 and Hunt et al. '668, if obvious, fails to render obvious the present invention and the rejection should be withdrawn.

Claim 6 was rejected under 35 USC 103 (a) as being unpatentable over Heffer '668 and LaBarge et al. '494 further in view of Iwasawa et al. (US 5,864,051). Applicants submit that neither Heffer '668 nor LaBarge et al. '494 nor Iwasawa et al. '051 singlely or combined render the present invention obvious. Claim 6 depends from and includes each and every limitations of claim 1. As discussed above, Heffer '668 and LaBarge et al.'494 singlely and in combination fails to render obvious the present invention. Applicants submit that Iwasawa et al. '051 fails to remedy this deficiency noted above with respect to Heffer '668 and LaBarge et al. '494.

Iwasawa et al. '051 discloses a catalyst for the selective oxidation of alkanes and alkenes and a process for preparing the catalyst comprising a noble metal. In the process of Iwasawa et al. '051, a solution of the desired noble metal compound is prepared by dissolving the desired compound either in water or an organic solvent. It is disclosed that most of the noble metal salts are soluble in water, while some of the organo-metallic compounds are only soluble in organic solvents such as acetone. Applicants submit that there is no disclosure in Iwasawa et al. '051 of a process for the formation of a coating of metal oxides comprising at least one precious metal from Group VIII of the Periodic Table of the elements in combination with titanium and/or zirconium, on an electrically conductive substrate made of steel or of iron as set forth in the present invention. Applicants submit that a combination of Heffer '668,

LaBarge et al. '494 and Iwasawa et al. '051, if obvious, fails to render obvious the present invention and the rejection should be withdrawn.

Claims 20, 21 were rejected under 35 USC 103(a) as being unpatentable over Heffer '668 and LaBarge et al. '494 further in view of Sharma et al. (US 2007/0184208). Claim 20 has been cancelled. Applicants submit that neither Heffer '668 nor LaBarge et al. '494 nor Sharma et al '208 singlely or combined render the present invention obvious. Claim 21 depends from and includes each and every limitations of claim 1. As discussed above, Heffer '668 and LaBarge et al.'494 singlely and in combination fails to render obvious the present invention. Applicants submit that Sharma et al '208 fails to remedy this deficiency noted above with respect to Heffer '668 and LaBarge et al. '494.

Sharma et al '208 discloses the use of several metal acetylacetonates obtained by mixing solutions comprising metal acetylacetonates. However, Applicants submit that Sharma et al. '208 fails to disclose a process for the formation of a coating of metal oxides comprising at least one precious metal from Group VIII of the Periodic Table of the elements in combination with titanium and/or zirconium, on an electrically conductive substrate made of steel or of iron as set forth in the present invention. Applicants submit that a combination of Heffer '668, LaBarge et al. '494 and Sharma et al.'208, if obvious, fails to render obvious the present invention and the rejection should be withdrawn.

Applicants gratefully acknowledge the indications of the allowability of claims 12 and 22 if rewritten to overcome the rejection(s) under 35 USC 112, second paragraph and to include all of the limitations of the base claims and any intervening claims. New claim 24 comprises a combination of base claim 1 and the limitations of claims 12. Applicants submit that claim 24 is allowable.

In view of the foregoing remarks, applicant respectfully submits that claims 1-13 and 21-24 of the present application are in condition for allowance and prompt favorable action is solicited.

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Respectfully submitted,

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